Acute Coronary Syndromes

"NO CULPRIT" ST-ELEVATION INFARCTION: ROLE OF CARDIAC MAGNETIC RESONANCE IMAGING IN ESTABLISHING A DEFINITIVE ETIOLOGY

ACC Moderated Poster Contributions
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Background: Research indicates 10-15% of patients with presumed ST-elevation myocardial infarction (STEMI) will not have a clear culprit artery. Accurate diagnosis in these patients is often challenging. We examined the value of cardiac MRI (CMR) in determining the etiologies and outcomes in patients with "no culprit" STEMI.

Methods: Data from a prospective registry of STEMI patients was queried from March 2003 to December 2009. CMR was performed at the discretion of the attending cardiologist.

Results: 412 (15%) of 2,728 consecutive Level 1 MI patients had no clear culprit artery. Of these, 201 (47.4%) had abnormal cardiac biomarkers with a definitive diagnosis in 157 (78%). In 210 patients with normal biomarkers, only 82 (39%) received a definitive diagnosis. (Table 1) CMR was performed in 123 (30%) of "no culprit" patients. Patients who received CMR were more likely to have a definitive diagnosis than those who did not (95[77%] vs. 144[50%], p=0.01). Specifically, patients with abnormal biomarkers and with CMR were more likely to have a definitive diagnosis than those with abnormal biomarkers and without CMR (78[91%] vs. 70[69%], p<0.001). CMR led to a diagnosis different from the presumptive clinical diagnosis 53% of the time.

Conclusions: "No culprit" STEMI patients with positive biomarkers have similar mortality to STEMI patients with a culprit artery. CMR is a valuable diagnostic tool to help determine accurate diagnosis and treatment.

	Culprit patients (n=2316)	No culprit patients (n=412)	P-Value	No Culprit-Abnormal Biomarkers (n=202)	No Culprit-Normal Biomarkers (n=210)	P-Value
MI without a lesion, (%)		45 (10.9)		38 (18.8)	7 (3.3)	
Myopericarditis, (%)		57 (13.8)		34 (16.8)	23 (11.0)	
Stress Cardiomyopathy, (%)		34 (8.3)		33 (16.3)	1 (0.5)	
Cardiomyopathy, (%)		28 (6.8)		16 (7.9)	12 (5.7)	
Pulmonary embolism, (%)		6 (1.5)		5 (2.5)	1 (0.5)	<0.001
LVH, (%)		3 (0.7)		0 (0)	3 (1.4)	
Old MI, (%)		7 (1.7)		4 (2.0)	3 (1.4)	
Other, (%)		61 (14.8)		27 (13.4)	34 (16.2)	
No diagnosis, (%)		171 (41.5)		45 (22.3)	126 (60.0)	
30 day death, (%)	150 (6.5)	18 (4.4)	0.10	16 (7.9)	2 (1.0)	<0.001
One year death, (%)	221 (9.5)	26 (6.3)	0.035	25 (12.4)	11 (5.2)	0.01
One year readmission, (%)	344 (14.9)	47 (11.4)	0.066	26 (12.9)	21 (10.0)	0.36